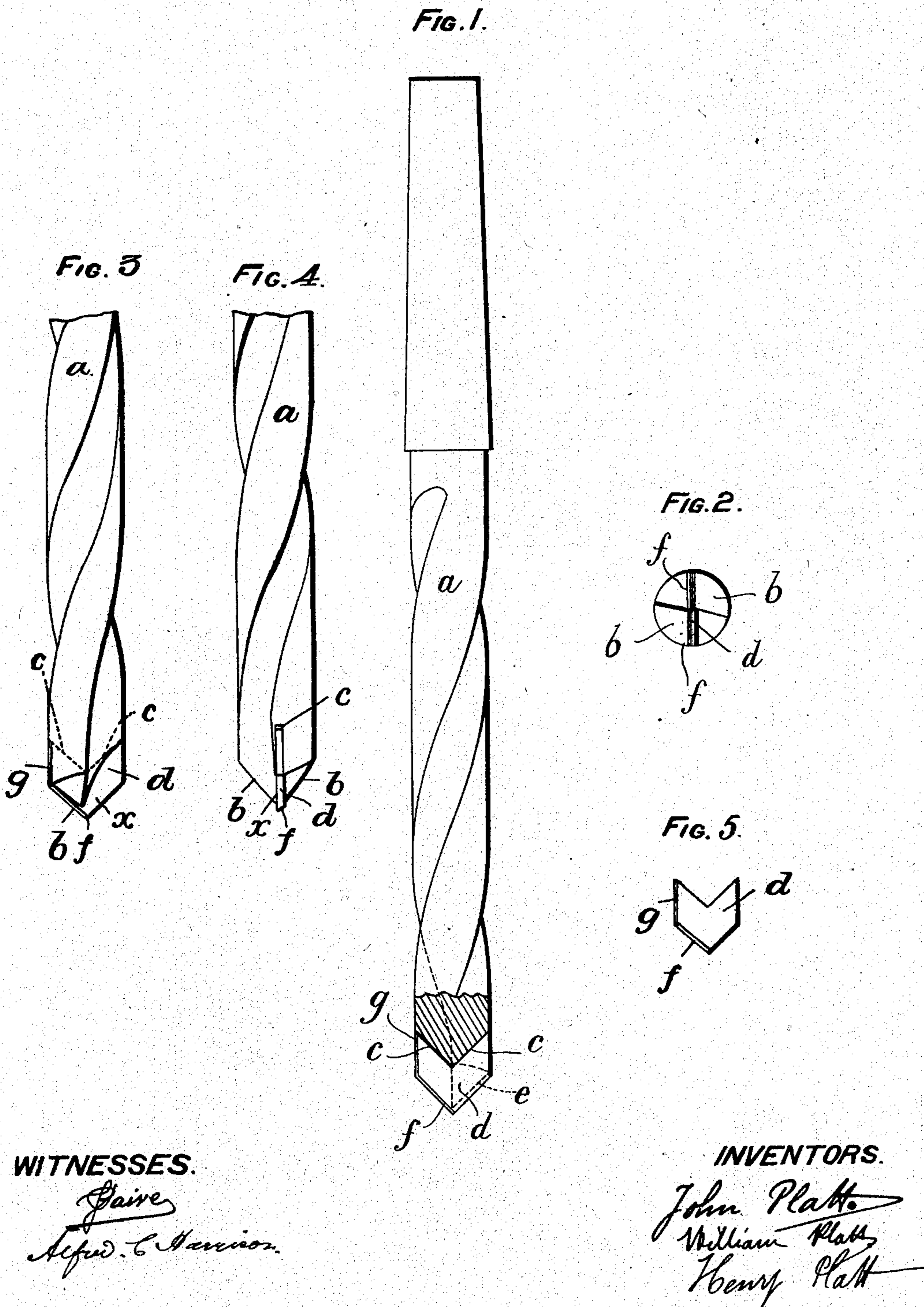


No. 719,860.

PATENTED FEB. 3, 1903.

J., W. & H. PLATT.  
TWIST OR LIKE DRILL.  
APPLICATION FILED AUG. 11, 1902.

NO MODEL.



# UNITED STATES PATENT OFFICE.

JOHN PLATT, WILLIAM PLATT, AND HENRY PLATT, OF OLDHAM, ENGLAND.

## TWIST OR LIKE DRILL.

SPECIFICATION forming part of Letters Patent No. 719,860, dated February 3, 1903.

Application filed August 11, 1902. Serial No. 119,345. (No model.)

*To all whom it may concern:*

Be it known that we, JOHN PLATT, WILLIAM PLATT, and HENRY PLATT, subjects of His Majesty the King of Great Britain, residing at Oldham, in the county of Lancaster, England, have invented a certain new and useful Improvement in Twist or Like Drills, of which the following is a specification.

This invention relates to an improvement in twist and like drills, such as those having grooves which are parallel to the axis in place of being spiral, the object being to obviate the necessity of grinding, with which is accompanied the repeated shortening of the drill. According to the invention the drill for this purpose is provided with a detachable cutting-bit and with means for holding and automatically adjusting or centering same, such bits being carried in the cutting end of what hitherto formed the drill proper.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is an elevation of a twist-drill, partly in section. Fig. 2 is a plan view of the point of same. Fig. 3 is an elevation of a drill on a somewhat smaller scale. Fig. 4 is also an elevation at right angles to Fig. 3. Fig. 5 is an elevation of the cutting-bit.

The drill consists of the usual grooved spindle *a*, the drilling end being, as usual, ground or turned off to an angle, as at *b b*. A cross slot or slit *c c* is then cut or formed across the center end of the required depth, the bottom of which is V-shaped, the apex of the angles being true and central to the center of the spindle.

The "bit" *d* is made from flat steel of a thickness or gage corresponding to the width of the holding-slot *c* and is of double-V or arrow-head shape, its inner edges abutting on the angles of the slot *c*, while its upper and outer V projects slightly beyond the point of the holder, as shown by the dotted line *e*, which represents the end of the spindle. The

inner angles of the bit being of corresponding angle of the slot *c c*, the bit automatically adjusts itself central to the holder and also is held in place. The cutting edges of the bit *d*, which project beyond the line *e*, are reversely beveled by grinding, as at *f f*, and the sides are also beveled, as at *g*, to correspond with the curvature of the side of the spindle. The two grooves extend to the point of the drill, and each advancing face of the bit *d* is practically flush with and forms a continuation of the advancing side or edge of the groove, as is seen at the point marked *x* in Figs. 3 and 4. When the bit is no longer effective, it is readily driven out of its holder and replaced by a new bit, the latter being manufactured at less cost than the time and power expended in regrinding as heretofore practiced costs and the original length of the entire drill is preserved.

What we claim is—

1. In combination, a drill having a slot in its end, said slot having angular faces centering in the center line of the drill, and a loose bit having exterior cutting edges, its inside edges shaped to seat in said slot, and its sides flush with the side of said drill.

2. In combination, a drill having a slot in its end, said slot having angular faces centering in the center line of the drill, and a loose bit having reversely-inclined exterior cutting edges, inside edges cut to an angle and corresponding to the angular faces in the slot of the drill, and sides shaped to the curvature of the sides of the drill.

In testimony whereof we have hereunto set our hands in the presence of two subscribing witnesses.

JOHN PLATT.  
WILLIAM PLATT.  
HENRY PLATT.

Witnesses:

ALFRED C. HARRISON,  
S. PAIRE.